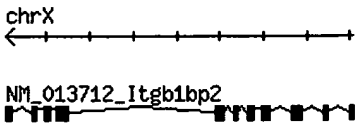
Gene Detail

Your Input Welcom

Symbol	**Itgb1bp2**
Name	**integrin beta 1 binding protein 2**
ID	MGI:1353420 Nomenclature Hi:
Synonyms	Chordc3, melusin
Genetic Map	Chromosome X cytoband D Mapping data(2)
Sequence Map	96050527-96055141 bp, + strand (From NCBI annotation of NCBI Build 34) UCSC Browser | NCBI Map Viewer  MGI Mouse GBrowse
Mammalian homology	human; rat (Mammalian Orthology)

Sequences

Representative Sequences			Length	Strain/Species	F
☐ genomic	26549	NCBI Gene Model | MGI Sequence Detail	4615	C57BL/6J	0
☐ transcript	NM_013712	RefSeq | MGI Sequence Detail	1420	-	
☐ polypeptide	Q9R000	SWISS-PROT | EBI | MGI Sequence Detail	350	Not Applicable	

For the selected sequences download in FASTA format Go

All sequences(14)

Phenotypes

All phenotypic alleles(1) : Targeted, other(1)

Mutant animals show normal cardiac structure and function under physiological conditions. When subjected to pressure overload, mutant hearts display contractile dysfunction and dilated cardiomyopathy.

Gene Ontology (GO) classifications	Component Z disc Function calcium ion binding, zinc ion binding... All GO classifications(3)
Expression	GXD literature index(1) cDNA source data(23)
Other database links	DoTS DT.40176660, DT.99748989 UniGene 46232 TIGR TC1465282, TC1555768 NIA Mouse U020069

The Jackson Laboratory
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04/20/2006
MGI 3.43

	Gene Index Entrez Gene 26549
Protein domains	InterPro ID Description IPR007051 CHORD IPR007052 CS IPR008978 HSP20-like chaperone Graphical View of Protein Domain Structure
Molecular reagents	All nucleic(24) Genomic(1) cDNA(23)
References	(Earliest) J:57924 Brancaccio M *et al.*, "Melusin is a new mus specific interactor for beta(1) integrin cytoplasmic domain." J Biol Chem 1999 Oct 8;274(41):29282-8 (Latest) J:93913 Kuninger D *et al.*, "Gene discovery by microarray: identification of novel genes induced during grow factor-mediated muscle cell survival and differentiation." Genomics 2004 Nov;84(5):876-89 All references(6)

References
Query Results – Details

MGI Accession ID: MGI:2448192
J Number: J:81163
Other Accession IDs:

- 22402161 (MEDLINE)
- 12496958 (PubMed)

Title: Melusin, a muscle-specific integrin beta(1)-interacting protein, is required to prevent cardiac failure in response to chronic pressure overload.
Authors: Brancaccio M; Fratta L; Notte A; Hirsch E; Poulet R; Guazzone S; De Acetis M; Vecchione C; Marino G; Altruda F; Silengo L; Tarone G; Lembo G
Journal: Nat Med
Volume: 9
Issue: 1
Date: 2003 Jan
Year: 2003
Pages: 68-75
Review Status: Peer Reviewed

Abstract:

Cardiac hypertrophy is an adaptive response to a variety of mechanical and hormonal stimuli, and represents an early event in the clinical course leading to heart failure. By gene inactivation, we demonstrate here a crucial role of melusin, a muscle-specific protein that interacts with the integrin beta(1) cytoplasmic domain, in the hypertrophic response to mechanical overload. Melusin-null mice showed normal cardiac structure and function in physiological conditions, but when subjected to pressure overload-a condition that induces a hypertrophic response in wild-type controls-they developed an abnormal cardiac remodeling that evolved into dilated cardiomyopathy and contractile dysfunction. In contrast, the hypertrophic response was identical in wild-type and melusin-null mice after chronic administration of angiotensin II or phenylephrine at doses that do not increase blood pressure-that is, in the absence of cardiac biomechanical stress. Analysis of intracellular signaling events induced by pressure overload indicated that phosphorylation of glycogen synthase kinase-3beta (GSK-3beta) was specifically blunted in melusin-null hearts. Thus, melusin prevents cardiac dilation during chronic pressure overload by specifically sensing mechanical stress.

Additional Information:

- Genes and Markers (1)
- Phenotypic Alleles (1)

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